

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave.St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-018785**Date Inspected:** 28-Nov-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG**Summary of Items Observed:**

CWI Inspector: Mr. Bao Qian

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

**OBG Bay 13**

This QA Inspector observed ZPMC welder Mr. Hu Feng Jian, stencil 067877 used flux cored welding procedure WPS-345-FCAW-3G(3F)-FCM-Repair to make weld repairs to OBG segment 13AE grillage weld SA7038-029. ABF CWI Mr. Bao Qian presented this QA Inspector with weld repair document B-WR-17818 that documents the repair of this weld. Mr. Bao Qian informed this QA Inspector that the depth of the weld repair gouge prior to welding was 30mm. This QA Inspector measured a welding current of approximately 220 amps and 23.5 volts. This QA Inspector observed Mr. Hu Feng Jian appeared to be certified to make this weld and the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Niu Xuehai, stencil 066443 used flux cored welding procedure WPS-345-FCAW-3G(3F)-FCM-Repair to make weld repairs to OBG segment 13AE grillage weld SA7038-038. QA Inspector observed the base material temperature adjacent to where he was welding melted a 230 degree

---

## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

---

Celsius temperature indicating crayon. This QA Inspector informed ZPMC QC Inspector Mr. Wang Li Yang that no additional welding will be performed on this weld joint until the base material cools below 230 degrees. ABF CWI Mr. Bao Qian presented this QA Inspector with weld repair document B-WR-17828 that documents the repair of this weld. Mr. Bao Qian informed this QA Inspector that the depth of the weld repair gouge prior to welding was 35mm. This QA Inspector observed ZPMC has recorded a welding current of 220 amps and 23.0 volts. This QA Inspector observed Mr. Niu Xuehai appeared to be certified to make this weld and the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. After the weld and base materials cooled to less than 230 degrees Celsius, items observed on this date appeared to generally comply with applicable contract documents.

### OBG Bay 14

This QA Inspector observed ZPMC welder Mr. Wang Li, stencil 044772 used shielded metal arc welding process to make 3G position (vertical) repairs of OBG segment 13CE side plate SP3075A stiffener weld SEG3110J-196. It appears this weld had been ultrasonically rejected. This QA Inspector observed a welding current of approximately 170 amps. This QA Inspector asked ABF CWI Mr. Bao Qian which welding specification was being used and what weld repair document had been issued for this repair. Mr. Bao Qian informed this QA Inspector that the WPS is WPS-345-SMAW-3G(3F)-Repair-1 and that he does not have a copy of the weld repair document for this weld. This QA Inspector observed that the maximum welding current in the WPS is 160 amps and that Mr. Wang Li had a welding current that was approximately 10 amps above this maximum limit. Mr. Bao Qian informed this QA Inspector that Mr. Wang Li had completed this weld and he could no longer adjust the welding machine. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Zhengbin, stencil 216086 used shielded metal arc welding procedure WPS-345-SMAW-3G(3F)FCM-Repair-1 to make 3G position (vertical) repairs of OBG segment 13CE side weld between floor beam FB3106A and longitudinal diaphragm LC3026A. It appears this weld had been ultrasonically rejected. This QA Inspector observed an electrical heating element on the area that was to be welded and that Mr. Wang Zhengbin was waiting for the base material to become hot prior to commencing welding of this repair area. This QA Inspector asked ABF CWI Mr. Bao Qian which weld repair document had been issued for this repair. Mr. Bao Qian informed this QA Inspector that he does not have a copy of the weld repair document for this weld, and that the dayshift QC Inspectors might have taken it with them at the end of their shift. Mr. Bao Qian informed this QA Inspector that he will ask the day shift QC Inspectors for a copy of the weld repair document. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Dan Deyin, stencil 044795 used flux cored welding procedure WPS-B-T-2232-TC-U5-F to make OBG segment 13AE weld SEG3007G-048. This QA Inspector observed ZPMC QC had recorded a welding current of approximately 320 amps and 29.0 volts. This QA Inspector observed that Mr. Dan Deyin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Quin Quan, stencil 044774 used flux cored welding procedure WPS-B-T-2231-B-U2-F to make OBG segment 13AE weld SEG3007AD-107. This QA Inspector observed a welding current of approximately 325 amps and 30.7 volts. This QA Inspector observed that Mr. Zhang Quin Quan appeared to be certified to make these welds. Items observed on this date appeared to generally

---

## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

---

comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Xiang Rong, stencil 066763 used flux cored welding procedure specification WPS-B-T-2232-TC-U5-F to make OBG segment 13AE weld SEG3007J-047. This QA Inspector observed ZPMC has recorded a welding current of 325 amps, 30.7 volts, the base materials were preheated with an electric heater and Mr. Zhang Xiang Rong appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Liu Xiaolin stencil 067079 used flux cored welding procedure specification WPS-B-T-2233-TC-U4B to make OBG segment 13AE weld SEG3007Y-345. This QA Inspector observed ZPMC has recorded a welding current of approximately 227 amps and 25.3 volts and Mr. Liu Xiaolin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Quanlin stencil 066746 used flux cored welding procedure specification WPS-B-T-2233-TC-U4B to make OBG segment 13AE weld SEG3007G-048. This QA Inspector observed ZPMC has recorded a welding current of approximately 320 amps and 29.0 volts and Mr. Wang Quanlin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.



### Summary of Conversations:

See Above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact James Devy +8615000026784, who represents the Office of Structural Materials for your project.

---

<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer

---